

1 ABSTRACT OF THE DISCLOSURE

2 A process for fabricating ceramic composites employs a
3 thermoplastic photo-curable pre-ceramic polymer in which the
4 component is shape by a variety of standard composite
5 fabrication techniques, such as filament winding, tape
6 winding, and woven cloth winding. The process includes
7 steps of passing ceramic fiber monofilament, tow, mat, or
8 woven cloth through a solution of said thermoplastic
9 photo-curable pre-ceramic polymer, applying ceramic fiber
10 monofilament, tow, mat, or woven cloth to a moving flat
11 substrate, using a compaction roller to press the
12 thermoplastic pre-ceramic polymer coated ceramic fiber onto
13 flat substrate using photo-light of the ultraviolet,
14 visible, or infrared light spectrum to induce cross-linking
15 (curing) of the photo-curable pre-ceramic polymer thereby
16 rendering a thermoset polymer and either partially or
17 completely pyrolyzing the now cured pre-ceramic polymer
18 matrix coated ceramic fiber material.